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Theodore J. Krellner

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CANTOR COLBURN LLP
20 Church Street
22nd Floor
Hartford, CT 06103

EXAMINER

BARTON, JEFFREY THOMAS

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THEODORE J. KRELLNER, INSIK KIM, HUNNAM LIM, and
KYURULL JANG

Appeal 2010-001217
Application 10/707,981
Technology Center 1700

Before CHUNG K. PAK, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL¹

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1, 5, and 9-11. We have jurisdiction under 35 U.S.C. § 6(b).

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

We AFFIRM.

Appellants' invention relates to an infrared (IR) radiation detector having increased thermal isolation between a thermopile and a base header for increased signal output by providing a cavity there between (Spec. ¶¶ [0013]-[0014]). Claims 1 and 9 are illustrative:

1. A thermal detection device having a hot and a cold region, the device comprising:

a first thermocouple disposed across the hot and cold regions, the first thermocouple having a first terminal and a defined polarity;

a second thermocouple disposed across the hot and cold regions, the second thermocouple having a second terminal and a polarity opposite to the polarity of the first thermocouple;

a thermal absorber disposed at the hot region and in thermal communication with the first and second thermocouples;

a diaphragm member supporting the first thermocouple and the second thermocouple thereon;

a support rim supporting the diaphragm member thereon, the support rim having a first cavity, the first cavity having a first predetermined maximum width; and

a metal base header supporting the support rim, the metal base header having a second cavity therein communicating with the first cavity, the second cavity having a second predetermined maximum width at least as large as the first predetermined maximum width, wherein the first and second thermocouples generate a voltage across the first and second terminals that is indicative of an amount of thermal radiation absorbed at the thermal absorber.

9. The device of Claim 1, wherein a depth of the second cavity is equal to or greater than about 0.1 millimeter and equal to or less than about 10 millimeter.

The Examiner relies upon the following evidence:

<u>First Named Inventor</u>	<u>Document No.</u>	<u>Issue or Pub. Date</u>
Watanabe	US 5,056,929	Oct. 15, 1991
Endo	US 5,693,942	Dec. 2, 1997
Lambert	US 6,828,560 B2	Dec. 7, 2004

The Examiner maintains, and Appellants seek review of, the following rejections:

1. The rejection of claim 1 under 35 U.S.C. § 102(e) as anticipated by Lambert;
2. The rejection of claims 9 and 10 under 35 U.S.C. § 103(a) as obvious over Lambert;
3. The rejection of claim 5 under 35 U.S.C. § 103(a) as obvious over Lambert in view of Watanabe;
4. The rejection of claims 1, 5, and 9-11 under 35 U.S.C. § 103(a) as obvious over Endo in view of Watanabe.

Appellants present arguments under separate headings for each of the rejections, which we address below accordingly.

We adopt the Examiner's findings in the Answer as our own and add any additional findings of fact appearing below for emphasis.

II. ANTICIPATION – CLAIM 1 - LAMBERT

A. ISSUE ON APPEAL

A first issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that the Examiner erred in finding that Lambert teaches an embodiment having both

a support rim and a metal base header, as recited in claim 1? We answer this question in the negative.

B. DISCUSSION

The Examiner expressly relies on the “upper portion 202” of Figure 8 as constituting the metal base header recited in claim 1 and the “frame 12” as constituting the support rim recited in claim 1 (Ans. 3 and 7).

Appellants initially contend that the Examiner relies on “circuit board 52” of Figure 5 as constituting the metal base header (Br. 9) and then contends that the Examiner is misconstruing the teachings of Lambert by improperly mixing and matching components from different embodiments, specifically the upper portion 202/206 of Figure 8 and the frame 12/body 20 of Figure 5 (Reply Br. 5).

We disagree that the Examiner has chosen components from different embodiments in rejecting claim 1. With respect to Figure 8, Lambert states that “[s]ensor 200 includes thermopile 10 which is identical to that described with reference to FIG. 1” (Lambert, col. 5, ll. 52-55). Figures 1-4 of Lambert represent various views of a single structure of a sensor 10, which includes a frame 12/ body 20 (Lambert, col. 2, ll. 31-38 and 63-66). Thus, Figure 8 incorporates the entire sensor 10 disclosed in Figures 1-4, including the frame 12/body 20 thereof, which the Examiner relies upon as constituting the support rim of claim 1.

With respect to Figure 8, Lambert also states that “[t]hermopile 10 is enclosed in a package 202 which includes a lower portion 204 and an upper portion 206” (Lambert, col. 5, ll. 55-57). Yet, elsewhere Lambert references “upper portion 202” (Lambert, col. 5, ll. 65-67 and col. 6, ll. 2-7). Thus,

Figure 8 also includes upper portion 202/206, which the Examiner relies upon as constituting the metal base header recited in claim 1.

Since Figure 8 includes all of the features relied upon by the Examiner, Appellants' evidence of the Examiner's improper combination of components is unpersuasive.

Further, Appellants contend that "the Examiner has not identified any teaching in Lambert et al. which supports the [] Examiner's assertion" that upper portion 202 supports the rim via physical attachment thereto or is capable of performing the intended use of supporting the rim (Reply Br. 5-6).

In Figure 8, the lower portion 204 of package 202 is physically attached to frame 12 of sensor 10 via adhesive material 218 and the lower portion 204 is physically attached to upper portion 206 via conventional means (Lambert, col. 5, ll. 57-67). Accordingly, it is reasonable for the Examiner to find that the teachings of Lambert meets the requirement of claim 1 that upper portion 206 (metal base header) supports frame 12 (support rim) via the mutual physical attachment to lower portion 204. We find nothing in Appellants' arguments to persuade us against the Examiner's finding.

The evidence as a whole supports the Examiner's finding that Lambert teaches an embodiment having both a support rim and a metal base header, as recited in claim 1, such that the thermal detection device is "described" within the meaning of § 102.

Although dependant claim 5 stands rejected separately under 35 U.S.C. § 103(a), the Examiner relies upon Lambert in the same capacity as in the rejection of claim 1. Appellants provide no arguments in addition

to the arguments discussed above with respect to claim 1 (Br. 11).
Accordingly, we sustain the rejection of claim 5 for the reasons discussed above.

III. OBVIOUSNESS – CLAIMS 9 AND 10 - LAMBERT

Although Appellants indicate that claims 9 and 10 stand or fall independently (Br. 10), the Examiner has provided the same rationale as to the obviousness of each of the recited depths of the second cavity. Accordingly, while we have considered each claim separately, the issue for each claim is the same.

A. ISSUE ON APPEAL

A second issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support Appellants' view that the Examiner erred in concluding that the particular depths recited in claims 9 and 10 would have been obvious to one of ordinary skill in the art, despite Lambert's silence as to cavity depth? We answer this question in the negative.

B. DISCUSSION

Appellants' Brief contends generally that Lambert does not teach the cavity depth range recited in claim 9 or the specific cavity depth of claim 10 (Br. 10).

The Examiner admits that Lambert is silent concerning the depths of the second cavity (Ans. 4 and 8). Rather, the Examiner contends that "depths such as those claimed would reasonably be expected to provide a concentration effect precisely as described by Lambert et al. Furthermore, a skilled artisan would have been able to select any desired thickness of

portion 202, in order to achieve the desired level of concentration” (Ans. 4 and 9).

The Examiner has set forth a reasonable explanation for why the claimed subject matter would have been obvious to one of ordinary skill in the art based on the teachings of Lambert. Appellants merely reproduce the claim limitations and generally alleged that the reference fails to teach those limitations. Merely pointing out what a claim recites is not considered an argument for separate patentability of the claim. 37 C.F.R. § 41.37(c)(1)(vii). Such conclusory statements fall well short of rebutting the Examiner’s reasonable conclusion of obviousness.

Not until the Reply Brief do Appellants argue that “the wording ‘desired degree of concentration’ does not specify what concentration is being referred to” (Reply Br. 6-7). The arguments presented in the Reply Brief, which for the first time presents specific arguments directly addressing the Examiner’s reasoning, were not timely presented and, therefore, are not properly before us. *See Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (Informative²) (“the reply brief [is not] an opportunity to make arguments that could have been made in the principal brief on appeal to rebut the Examiner’s rejections, but were not.”).

Even considering the position of Appellants’ first put forth in the Reply Brief, we are not persuaded that the Examiner’s reasoning is untenable. We find no confusion in the language used by the Examiner. Lambert is clearly directed towards a thermopile infrared detector having an

² Designated as an “Informative Opinion” at www.uspto.gov/ip/boards/bpai/decisions/inform/index.jsp.

integrated light concentrator to increase the amount of infrared power sensed by the detector (Lambert, col. 1, ll. 5-8).

Appellants' arguments thus do not persuasively dispute the Examiner's position that one of ordinary skill in the art would have arrived at the claimed cavity depth by adjusting the depth to arrive at a desired light concentration.

IV. OBVIOUSNESS –CLAIMS 1, 5, AND 9-11 - ENDO/WATANABE

Appellants present argument with respect to claims 1, 5, and 11 as a group (Br. 12), for which we select independent claim 1 as a representative claim.

Although Appellants indicate that claims 9 and 10 stand or fall independently, the Examiner has provided the same rationale as to the obviousness of each of the recited depths of the second cavity. Accordingly, while we have considered each claim separately, the issue for each of claims 9 and 10 is the same.

We first address the issue arising for representative claim 1 and then address the issue arising for claims 9 and 10 below.

Claim 1

A. ISSUE ON APPEAL

A third issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support Appellants' view that the Examiner erred in concluding that the invention recited in claim 1 would have been obvious to one of ordinary skill in the art based on the teachings of Endo and Watanabe? We answer this question in the negative.

B. DISCUSSION

Appellants contend that, in using the thermopile element 1 of Watanabe with the sensor 1 of Endo, pit 12 of Watanabe would not communicate with cavity 6A of Endo, since thermistor 2 is integrally formed with thermopile element 1 and must also be inserted into the sensor 1 of Endo (Br. 12). According to Appellants, Watanabe teaches away from removing the thermopile element 1 from thermistor 2, because doing so would result in a sensor that is not temperature compensated (Reply Br. 8).

The Examiner contends that it would have been obvious “to modify the infrared detector of Endo et al by replacing the resistance-type infrared sensor with a thermopile-type sensor taught by Watanabe et al” because “both references disclose that resistance-based and thermopile-based infrared detection is conventional in the art, and one of ordinary skill in the art would have been able to select any such known detector type, with the reasonable expectation of success” (Ans. 6).

In an obviousness analysis, the question to be asked is “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). In *KSR*, the Court recognizes that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416 (*citing United States v. Adams*, 383 U.S. 39, 50-51 (1966)). The substitution of recognized equivalents is a classic basis for a conclusion of obviousness. *In re Fout*, 675 F.2d 297, 301 (CCPA 1982).

Endo teaches that “a thin film metallic resistance material or thin film thermocouples are used for the thermal sensitive elements of the infrared sensor” (Endo, col. 1, ll. 25-27). One of ordinary skill in the art, having this teaching, would have recognized that a thin film metallic resistance material and a thin film thermocouple could be substituted for one another in the invention taught by Endo with predictably successful results. Appellants point to no teaching in Endo to suggest that such a substitution would have been untenable. Thus, the primary reference alone provides sufficient motivation for one of ordinary skill in the art to use thermocouples instead of the thermal resistor film used by Endo.

The Examiner relies on Watanabe’s further disclosure of an example structure of a known thin film thermocouple element (thermopile), having a thermal absorber in communication the thermocouples and supported by a diaphragm member supported by a silicon rim, as recited in claim 1 (Ans. 6).

We agree that the improvement of Watanabe is directed towards using a known thermopile element 1 in conjunction with a thermistor in certain applications (Watanabe, col. 1, ll. 53-65). However, the particular use of the thermopile element 1 of Watanabe does not discredit the teaching in Endo regarding substituting a known thermopile element for a thin film metallic resistance material in the sensor taught by Endo.

The weight of the evidence taken as a whole supports the Examiner’s conclusion of obviousness under the law.

Claims 9 and 10

A. ISSUE ON APPEAL

A fourth issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support Appellants’ view that the

Examiner erred in concluding that the particular depths recited in claims 9 and 10 would have been obvious to one of ordinary skill in the art, despite Endo's silence as to cavity depth? We answer this question in the negative.

B. DISCUSSION

Appellants' Brief and Reply Brief merely contend generally that neither Endo nor Watanabe teaches the cavity depth range recited in claim 9 or the specific cavity depth of claim 10 (Br. 12; Reply Br. 9).

The Examiner contends that "the selection of a particular depth of the recess is considered to have been a matter of optimization, within the abilities of one [sic, one] having ordinary skill in the art" (Ans. 7).

The Examiner has set forth a reasonable explanation for why the claimed subject matter would have been obvious to one of ordinary skill in the art based on the teachings of Endo and Watanabe. Appellants merely reproduced the claim limitations and generally alleged that the references fail to teach those limitations. Merely pointing out what a claim recites is not considered an argument for separate patentability of the claim. 37 C.F.R. § 41.37(c)(1)(vii). Such conclusory statements fall well short of rebutting the Examiner's reasonable conclusion of obviousness.

V. CONCLUSION

On the record before us and for the reasons discussed above, we sustain the rejections maintained by the Examiner.

VI. DECISION

We affirm the Examiner's decision.

VII. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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CANTOR COLBURN LLP
20 Church Street
22nd Floor
Hartford CT 06103